



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,124	03/12/2004	Satoshi Murata	2803.70072	6940
24978	7590	05/10/2007		
GREER, BURNS & CRAIN 300 S WACKER DR 25TH FLOOR CHICAGO, IL 60606			EXAMINER WARD, JESSICA LEE	
			ART UNIT 1733	PAPER NUMBER
			MAIL DATE 05/10/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/800,124	<b>Applicant(s)</b> MURATA ET AL.	
	<b>Examiner</b> Jessica L. Ward	<b>Art Unit</b> 1733	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5,7 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7 and 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 3/14/03. It is noted, however, that applicant has not filed a certified copy of the 2003-70401 application as required by 35 U.S.C. 119(b).

Applicant filed a letter on 7/15/04 stating that the certified copy of the foreign priority document was enclosed; however, no such priority document is found in the file. The Office prepared an Artifact sheet on 7/15/04 indicating that a foreign priority document was received; however, no such priority document is found in the file. In the remarks filed on 2/12/07, Applicant claims to have included a stamped copy of the return receipt post card that indicates that the Office received the foreign priority document; however, no such post card is found in the file. Regardless, **a certified copy of the foreign priority document is still absent from the present Application and Applicant must remedy this problem.**

See MPEP, Rule 1.55:

... "The claim for priority and the certified copy of the foreign application specified in 35 U.S.C. 119(b) or PCT Rule 17 must, in any event, be filed before the patent is granted. If the claim for priority or the certified copy of the foreign application is filed after the date the issue fee is paid, it must be accompanied by the processing fee set forth in § 1.17(i), but the patent will not include the priority claim unless corrected by a certificate of correction under 35 U.S.C. 255 and § 1.323"...

***Drawings***

2. The drawings were received on 2/12/07. These drawings are accepted.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7 and 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 7, it recites the limitation "said at least one electromagnetic chuck" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. It is suggested to change this to --said at least one electrostatic chuck--.

As to claim 12, it is unclear what Applicant means by "sides surfaces" in line 4. Applicant is asked to clarify. It is suggested to change this phrase to --side surfaces--.

As to claim 13, it is unclear what Applicant means by "sides surfaces" in line 4. Applicant is asked to clarify. It is suggested to change this phrase to --side surfaces--.

As to claim 14, it is unclear what Applicant means by "sides surfaces" in line 22. Applicant is asked to clarify. It is suggested to change this phrase to --side surfaces--.

***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6991699, previously cited) in view of Fuwa et al. (JP 2003-45949, abstract and on-line translation).

Lee teaches a method of producing a LCD by dripping a liquid crystal 12 in a region in an annular seal 14 formed on a first (glass) substrate 510 (column 11, lines 31-33; column 11, lines 19-21), preparing a second (glass) substrate 520 (column 11, lines 31-33; column 11, lines 19-21), having a first electrostatic chuck 122 and a second electrostatic chuck 121 arranged in a vacuum chamber 110 (column 8, lines 29-31; column 8, line 56 – column 9, line 27), holding the first substrate by the first electrostatic chuck (column 11, lines 41-43; Figures 4A-10B), holding the second substrate by the second electrostatic chuck (column 11, lines 39-41; Figures 4A-10B), evacuating the vacuum chamber (column 12, lines 5-8), bonding the first and second substrates together in the vacuum chamber (column 14, lines 8-15), and opening the vacuum chamber to the atmosphere (column 14, lines 44-46).

It is unclear as to whether the reference teaches arranging a resin sheet on a surface of at least one of the first and second electrostatic chucks in the vacuum chamber, bending one or more portions of the resin sheet relative to the surface of the chuck, wherein a central portion of the resin sheet is placed on the chuck so as to be capable of being lifted from the chuck, and an end portion of the resin sheet being fixed to side surfaces of the chuck.

It is known in the art to use an electrostatic chuck to hold a substrate (i.e. glass) while it is being processed in a vacuum chamber and to arrange a resin sheet on the surface of the chuck, between the chuck and substrate, to prevent the formation of blemishes on the surface of the substrate, as taught by Fuwa (substrate 5, resin sheet 81/82, electrostatic chuck 25 – Figure 6,

Art Unit: 1733

abstract, sections [0001, 0035, 0053-0059, 0086] of online translation). One or more portions 55/58 of the resin sheet is bent relative to the surface of the chuck and fixed to side surfaces of the chuck to prevent shifting during substrate processing (Figure 6; sections [0053]). However, this fixing is only temporary so that the resin sheet can be easily detached from the chuck and replaced when necessary (sections [0054, 0059]); therefore, Fuwa teaches a central portion of the resin sheet being capable of being lifted from the chuck.

It would have been obvious to one having ordinary skill in the art at the time of the invention to arrange a resin sheet on the surface of at least one of the first and second chucks of Lee, bend one or more portions of the resin sheet relative to the surface of the chuck, wherein a central portion of the resin sheet is placed on the chuck so as to be capable of being lifted from the chuck, and have an end portion of the resin sheet be fixed to side surfaces of the chuck because such is known in the electrostatic chuck art, as taught by Fuwa, where the resin sheet prevents the formation of blemishes on the surface of the substrate and bending/fixing portions of the resin sheet prevents shifting of the same during substrate processing while still allowing the resin sheet to be easily detached from the chuck and replaced whenever necessary.

7. Claims 1-5, 7, 10-13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. and Fuwa et al. as applied to claim 14 above, and further in view of the collective teachings of Park et al. (US 2003/0179340), Takabayashi et al. (JP 11326857, listed in IDS, abstract and on-line translation) and Ogasawara et al. (US 5997962).

All the limitations were addressed above with respect to claim 14 but the bonded substrates being lifted up from the chuck by a lift pin and the resin sheet having a hole through which the lift pin can be inserted.

It is known in the LCD art to use adsorption chucks to hold/bond first and second substrates where the bonded substrates are lifted up from the lower adsorption chuck by a lift pin, which extends through the chuck, so that the bonded substrates can be easily unloaded from the vacuum chamber by a robot, as taught by Park (sections [0003, 0038-0043]) and/or Takabayashi (abstract, Figure 10, sections [0038-0039, 0050, 0053]). It is also known in the adsorption chuck art, as it relates to electrostatic chucks for adsorbing LCD substrates, to lift the processed substrate up from the chuck by a lift pin that extends through the chuck so that the processed substrate can be easily unloaded from the vacuum chamber by transfer means, as taught by Ogasawara (Figures 1-3; column 1, lines 6-10; column 5, lines 1-6; column 6, line 59 – column 7, line 12; column 8, line 66 – column 9, line 9).

Since Lee unloads the bonded substrates from the vacuum chamber using a robot/transfer means (column 14, lines 58-63), it would have been obvious to one having ordinary skill in the art at the time of the invention to lift the bonded substrates up from the electrostatic chuck of Lee by a lift pin that extends through the chuck because such is known in the art, as taught by the collective teachings of Park, Takabayashi and Ogasawara, where this allows for easy unloading of the bonded substrates from the vacuum chamber using a robot/transfer means.

It is further noted that the electrostatic chuck of Ogasawara comprises an electrode sandwiched between resin layers where the lift pin extends through the electrode and resin layers (column 4, lines 45-49). Therefore, it would have been obvious to provide a hole in the resin sheet of Lee in view of Fuwa, through which the lift pin can be inserted, because although the resin sheet is temporarily fixed to the chuck it is not intended to be removed and replaced after each substrate is processed. So, without a hole for accommodating the lift pin, the resin sheet

Art Unit: 1733

would be removed from the chuck along with each pair of bonded substrates thereby decreasing the efficiency of the process.

***Allowable Subject Matter***

8. The prior art fails to teach or suggest that which is shown in Figure 6 of the present invention. The Examiner suggests amending claims 1 and 14 to include the following limitations: simultaneously lifting the resin sheet and bonded substrates up from the electrostatic chuck by the lift pin while the end portions of the resin sheet remain fixed to side surfaces of the electrostatic chuck.

***Response to Arguments***

9. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



Art Unit: 1733

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica L. Ward whose telephone number is 571-272-1223. The examiner can normally be reached on Mon-Fri between 9AM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jessica L. Ward  
Primary Examiner  
Art Unit 1733

